

October 17, 1984

TO: Noncoal File

FROM: Tom Portle, Reclamation Soils Specialist *TLP*

RE: Field Inspection Pursuant to Contract Conditions for Atlas Minerals General File, ACT/037/051, San Juan County, Utah

On September 27, 1984 representatives of the Division Susan Linner, Reclamation Biologist, Tom Portle, Reclamation Soils Specialist and Tom Tetting, Reclamation Geologist inspected Atlas Mineral's Roosevelt mine. They were accompanied by Mr. Richard Blubaugh of Atlas. The purpose of the inspection was to determine to what degree the demonstration of reclamation procedures at this recently (February, 1983) reclaimed minesite are in accord with condition No. 2 of the reclamation contract.

The Roosevelt site was accessed by taking highway 666 from Monticello to Dove Creek then highway 141 north to Gypsum Valley in Montrose county where a graded road leads one to the reclaimed property. (See map in Atlas General File included with submission).

The general condition of the reclamation was good. Few weeds were observed. Erosion was within acceptable limits. Areas where revegetation was not as yet satisfactory were on soil covered waste rock near the portals and in area where soil had been borrowed. Satisfactory results appear to have obtained over the greater part of the property from as much as can be determined at this time.

Plants which were observed in the surrounding community include blue gama (Bouteloua gracilis) was the most abundant while Indian Ricegrass Oryzopsis hymenoides and four-wing saltbush Atriplex canescens, crested wheatgrass Agropyron cristatum, greasewood Sarcobatus vermiculatus and fourwing saltbush Atriplex canescens were doing well.

The site as was indicated by Mr. Blubaugh on that date was shown with the intent to demonstrate the capacity and good faith of Atlas to perform reclamation. Its reclamation was to supplement information gained from the Cane Creek mine which had been reclaimed in May of 1984. No data on success is available as yet.



The Roosevelt site was considered important mainly from the standpoint of exhibiting the ability to reclaim waste rock (not a problem at the Cane Creek Mine) - See January 28, 1983 letter from Tom Tetting. Thus it is important to note the lack of success at the portal areas.

Monitoring over the next three years should allow some feel for the long term reclamation potential of waste rock to be obtained. There is no data on the wasterock itself. Soils data was presented via a letter of June 12, 1984.

#### Problem Assessment

The general direction, as is apparent from the attached history, is for commitments from Atlas to be gradually watered down. The degree of commitment and the closeness to completing the permitting process appear inversely related. What we are left with is a minesite in Colorado to test waste rock in which borrowed soil was utilized as cover and a minesite in Utah (Cane Creek) with no soil (mostly road reclamation). Both sites were broadcast seeded but not fertilized or mulched (phone conversation with Richard Blubaugh on October 16, 1984). Also pursuant to this conversation a seed list has been forwarded to DOGM for the Cane Creek site.

The sites do not represent the intent of test plots or test conditions and neither do they represent the recommendations contained in the M-K report which was originally a "substitute" to test plots and was reported to represent techniques employed throughout the region. The Cane Creek site was once thought to be actually unsuitable while the Colorado site was relatively less difficult than many sites. The use of native soil for direct borrow is not (hopefully) a typical situation. As the surrounding community was in very good condition no soil fertility problems are likely. This soil, when used without benefit of fertilization would be expected to yield good results but would indicate nothing about when and if fertilizer would be required at other locations.

In summary, the Cane Creek Mine appears a good test case for monitoring of stabilization of harsh, steep sites with no soil available. The Roosevelt site demonstrates that broadcast seeding can be successful on freshly borrowed topsoil on relatively level locations. Monitoring has been committed to and will document the long-term success at these locations. It will be especially informative to observe the success of waste rock locations. However, the larger intent of using test plots to determine the most beneficial methods to effect revegetation success over a wide variety of sites has been circumvented.



The following is a summary of the highlights of the various permitting commitments and their result: (for more information see attached history)

COMMITMENT	RESULT
Atlas committed to test plots and soils analysis (1977-1981) Test plot proposal (1981).	Slowly remove test plot commitment as permitting activity progressed.
Use money targeted for test plots for actual reclamation (1982).	Cane Creek reclaimed in spring of 1984. A typical site.
Consult professionals to develop reclamation methodology (1982).	Report produced recommendations largely ignored to date.
Designate Mine to utilize proposed methodology.	Has not been done.
Small-scale demonstrations for specific conditions that need special consideration.	Not done.
Reclamation of Roosevelt Mine in Montrose County, Colorado.	No mulch. No fertilizer. No special treatments. Waste rock covered with soil on nearly level terrain.
Reclamation of Cane Creek Mine.	No soils analysis nor fertilization. No mulch.

Conclusions:

1. No test conditions of any kind have been attempted except those natural conditions addressed inherent to the reclamation of the specific mine sites. Indeed, reclamation at these sites does not parallel Atlas' reclamation plans.
2. The recommendations of the original "substitute" for test plots, the M-K report, have been almost wholly ignored.



3. The position of Oil, Gas and Mining has eroded into one of extreme compromise. Even that has been circumvented by inconclusive reclamation efforts not representative of the diversity of reclamation challenges which will likely be encountered by Atlas.
4. The reclamation of waste rock is still an open question in areas where there is not a ready supply of topsoil to borrow from and cannot benefit from the atypical nearly flat terrain observed of the Roosevelt site.
5. Atlas is responsible to live up to the commitments in each MRP as per condition 2 of the reclamation contract of except as those are amended as a function of an evolving baseline level of reclamation knowledge. Specific provisions are to be drafted into each specific MRP as proposed in the May 25, 1982 letter from Richard E. Blubaugh of Atlas to Jim Smith of the Division.
6. It is typical to find statements attaching the use of amendments and treatments to test plot results. Since test plots are now moot this must be reconciled.

#### Summary and Recommendations

Many statements have been made by Atlas in the process of easing the test plot commitment. These include: 1) using the M-K report, 2) using test plot money to initiate reclamation, 3) designating a mine to be used to try proposed methodology, and 4) demonstration plots. These have one by one fallen by the wayside. In light of the above inadequacies they should be reconsidered.

Atlas should propose reclamation at a given site and work closely with the Division on conditions which when implemented will provide site specific knowledge of the quality necessary to address the wide variety of reclamation challenges.

The historical statements indicating that demonstration plots for specific conditions will be implemented should be reconsidered in light of the hole in the contract/MRP combination namely reference to procedure promised to be revealed by now extinct test plots.

jvb  
cc: S. Linner  
T. Tetting  
04440



## History of Test Plot Commitments

### Attachment I

COMMITMENT DATE	SUMMARY	EFFECT
February 15, 1977	Louise Mine Notices of Intent considered "typical" or "representative"	Commits Atlas to test plots and soil analysis
September 22, 1978	Mined Land Reclamation	Contract signed.
June 19, 1980	Letter from Richard Dye to Tom Suchoski indicating that reclamation department is pursuing two options "toward the implementation of a revegetation test plot program."	"Intent and activity will be sufficient to allow us to finalize permits still outstanding"
June 26, 1981	Letter from Tom Tetting to Atlas acknowledging receipt of test plot research proposal.	Reaffirms intent to conduct test plots.
March 24, 1982	Contract proposal item 4	Revegetation will proceed based on data from test plots.
	Item 3.	Will develop and maintain test plots.
May 25, 1982	Letter from Mr. Blubaugh of Atlas requesting an alternative to test plots.	Allow Atlas to use money targeted for test plots for actual reclamation.



Atlas will consult professional to develop methodology based on survey of revegetation of mined area in arid west.

A mine will be designated for proposed methodology. Atlas will amend plan to reflect methodology.

October 15, 1982 Letter with attached Morrison-Knudsen (MK) revegetation report provided to Division.

Substitute for test plots results Atlas prepared to establish small-scale demonstrations...Cite specific conditions which need special consideration.

November 22, 1982 Letter from Jim Smith to Atlas requesting specific mine(s) and types of demonstrations.

Listed specific items which should be included in demonstrations including fertilizer and mulch.

Required that specific site designs be forwarded to the Division for approval.

December 17, 1982 Letter to Atlas from Tom Tetting.

Approves December 2, 1982 proposal of Atlas requires details and specific timetable.

January 21, 1983 Atlas letter to Division indicating they will permanently reclaim the Cane Creek Mine during second quarter of 1983 with reseeding occurring in fall.

Commits to seeding and stabilization. Nothing in the way of test conditions.



January 28, 1983	Letter to Atlas from Jim Smith in which DOGM agrees with Atlas plan as contained in January 21, 1983 letter.	Requires that a Colorado site is brought into consideration to test reclamation of waste rock.
September 26, 1983	Atlas provides Division with information on reclamation of Roosevelt Mine.	
October 19, 1983	Division describes areas where above information is lacking.	Requires cover data from 1983 growth season.  Requires soil analysis of the parent material type.
October 28, 1983	Atlas claims that above requirements are without basis but does address the parent material.	
November 30, 1983	Meeting with Atlas at Division.	Additional environmental data from the Roosevelt site will be supplied to DOGM.
January 19, 1984	Letter from Atlas addressing meeting of November 30, 1983.	Annual reports will be provided for three years.
April 5, 1984	Letter to Atlas from John Blake regarding lack of reclamation at Cane Creek	Must initiate reclamation.
April 23, 1984	Atlas contacts Jim Smith committing to begin reclamation within 4 weeks.	Atlas commits to reclamation (again)



May 24, 1984	Memo describing joint inspection with State Lands on May 16, 1984.	Initial impressions of reclamation are favorable.
July 12, 1984	Atlas provides letter containing information on the Roosevelt site.	Provides soils data and vegetation observations.
September 27, 1984	Division inspects reclamation at the Roosevelt site.	Initial impressions of reclamation are favorable except in areas new portals.

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